

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
29 September 2005 (29.09.2005)

PCT

(10) International Publication Number  
**WO 2005/089521 A2**

(51) International Patent Classification: Not classified

Yong-Hang [US/US]; 7259 E. Cortez Road, Scottsdale, AZ 85260 (US).

(21) International Application Number:  
PCT/US2005/009478

(74) Agent: MACBLAIN, Thomas, D.; Gallagher & Kennedy P.A., 2575 East Camelback Road, Phoenix, AZ 85016-9225 (US).

(22) International Filing Date: 21 March 2005 (21.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/554,865 19 March 2004 (19.03.2004) US

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): ARIZONA BOARD OF REGENTS [US/US]; Brickyard Suite 601, Room 691AA, 699 S. Mill Avenue, Tempe, AZ 85281 (US).

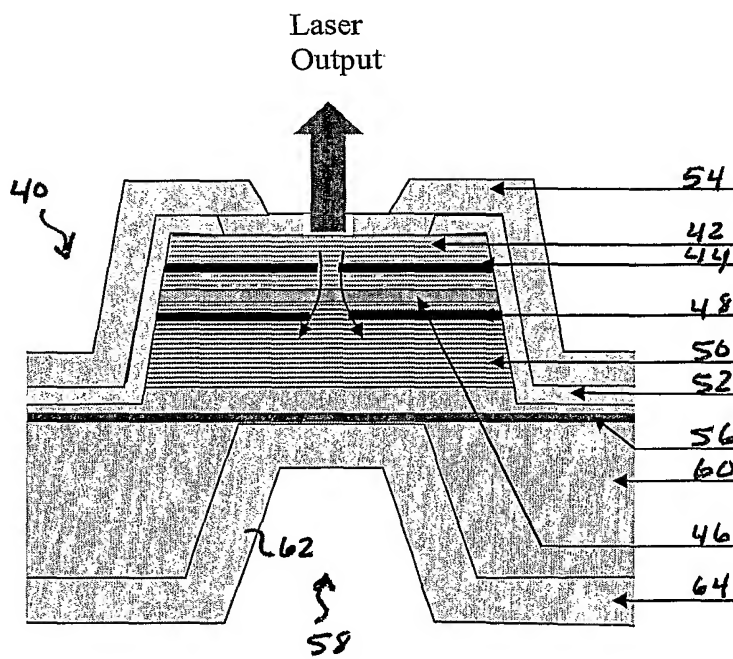
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SAMAL, Nigamananda [IN/US]; 1717 S. Dorsey Lane, Apt. 2071, Tempe, AZ 85281 (US). JOHNSON, Shane [CA/US]; 742 E. Kesler Lane, Chandler, AZ 85225 (US). ZHANG,

[Continued on next page]

(54) Title: HIGH POWER VCSELS WITH TRANSVERSE MODE CONTROL



(57) Abstract: A single mode high power laser device such as a VCSEL is formed with two oxide apertures, one on each side of the active region or cavity. The sizes of the apertures and the distances from the apertures to the cavity center are chosen or optimum, near-Gaussian current density distribution. The high power of a VCSEL thus formed is improved still more by good heat removal by either formation of a via through the substrate and gold plating on top and bottom of the VCSEL (including the via) or by lifting the VCSEL structure from the substrate and locating it on a heat sink.



**Published:**

— without international search report and to be republished  
upon receipt of that report

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